REMARKS

Claims 1-22 are pending. By this response, the drawings, specification and claims 1-4, 9, 10, 13, 15-19 and 22 have been amended. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Applicants appreciate the allowance of claims 4-9, 11-12 and 14-21 and the indication of allowability of claims 10, 13 and 22.

The Examiner alleges that the Information Disclosure Statement (IDS) filed on September 30, 1999 failed to comply with 37 C.F.R. §1.98(a)(3). Specifically, the Examiner alleges that foreign document no. 157032 does not include an explanation of relevance. Applicants bring to the Examiner's attention that as stated in the section marked "other" in the IDS, U.S. Patent No. 5,043,982 also provided in the IDS, corresponds to JP A3-157032. Thus, applicants respectfully submit that compliance of 37 C.F.R. §1.98(a)(3) as the English equivalent, namely U.S. patent No. 5,043,902, of JP A3-157032 has been provided. Accordingly, reconsideration of this matter is respectfully requested.

The Examiner objects to the drawings for reasons cited on the PTO-948 and because Figs. 16-18 are not labeled as "prior art". The Drawing Correction

Approval Request attached hereto addresses these issues and corrects the drawings. Accordingly, withdrawal of the objection is respectfully requested.

The Examiner objects to the specification due to minor informalities. Applicants have amended the specification to address these informalities. Accordingly, withdrawal of the objection is respectfully requested.

The Examiner objects to claims 3, 9 and 15 due to minor informalities. Claims 3, 9 and 15 have been amended to address the Examiner's concerns. Accordingly, withdrawal of the objection is respectfully requested.

The Examiner rejects claims 3, 10, 13 and 22 under 35 U.S.C. §112, second paragraph as being indefinite. This rejection is respectfully traversed. Specifically, the Examiner alleges that each of the above indicated claims recites a feature without proper antecedent basis. The claims have been amended to recite proper antecedent basis. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

The Examiner rejects claims 1-3 under 35 U.S.C. §103(a) as being unpatentable over applicant's Figs. 16-18 in view of Tanaka, et al. (U.S. Patent No. 5,627,832). This rejection is respectfully traversed.

The Examiner alleges that Figs. 16-18 of applicants' disclosed prior art provides the feature of the master device having a plurality of slave devices connected through at least one multiplexer in a tree configuration for

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transmitting and receiving various types of information of fixed length. The Examiner states that Figs. 16-18 do not disclose a multiplexer which specifies the slave device according to a round-robin polling order and the specified slave device transmitting specific information for starting communication with the master device, the specific information being used for matching the sampling time in the master device and executes specific calculations according to the specified information for returning the specific information from the master device according to the specific information for starting, as recited in claim 1. In regard to the round-robin polling order, the Examiner alleges that this feature is commonly known in the art and would be obvious to one of ordinary skill at the time of the invention. The Examiner also alleges that Tanaka provides the rest of the features of claim 1 not provided by Figs. 16-18. Applicants respectfully disagree.

As stated in MPEP §2142, to establish a prima facie case of obviousness, three (3) basic criteria must be met. First, there must be some suggestion of motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references, or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

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In regard to Tanaka, a system for using switching centers is provided. Within the system, a single master mobile switching center is included along with a plurality of local switching centers, terminal mobile service switching centers and a plurality of base stations connected to the terminal mobile switching centers. When a mobile station travels through a specified region, the base station transmits and receives message signals to and from the mobile stations. When moving through these various regions, it is necessary to synchronize the signals of the mobile stations and the base stations. This is accomplished by a synchronization signal processing signal based on the location of the mobile station. The synchronization signals are transmitted through the chain of communication to the terminal mobile local master and central master mobile service switching centers. Synchronization is accomplished between the mobile station based on its location to a base station and the various radio signals sent out from the different base stations.

The system of Tanaka does not disclose or suggest transmitting specific information from a specific slave device for starting communication with the master device, the specific information being used for matching the sampling time in the master device execute specific calculations according to specified information for returning the specific information from the master device according to the specific information for a starting, as recited in claim 1.

Synchronization in Tanaka is accomplished based on joint communication between a mobile device and various base stations. Thus, each feature of the claim is not provided in the combination of references. Accordingly, based on the deficiencies of the references, one of ordinary skill would not look to combine them in order to achieve applicant's claimed invention.

Further, there is no motivation to combine Figs. 16-18, with Tanaka and the alleged commonly known art of using a round-robin polling order via a multiplexer. The system of Tanaka in Figs. 16-18 are independently designed for unique purposes. For example, Tanaka does not suggest or disclose the use of a round-robin polling order, since the use of various switching centers is determined by where a mobile system is located. Further, Figs. 16-18 also fail to suggest specifying a slave device by a master device via multiplexer according to a round-robin polling order.

Furthermore, if it is commonly known to use a round-robin polling order via a multiplexer, as recited in claim 1, then the fact that Figs. 16-18 and Tanaka fail to suggest or disclose such a feature would indicate that these systems were designed specifically not to include such features.

Moreover, if, as applicants contend, the use of a round-robin polling order via a multiplexer is not commonly known, then Figs. 16-18 and Tanaka

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fails to suggest using such a polling order in the manner claimed and thus, one of ordinary skill would not look to combine these references.

Thus, the combination of references do not provide applicants' claimed invention. Further, the requirements for establishing the rejection under 35 U.S.C. §103 has not been met. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

For at least these reasons, it is respectfully submitted that claims 1-3 are distinguishable over the cited references. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings, Reg. No. 48,917, at the telephone number of the undersigned below.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of $$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1. 17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the specification as follows:

Please replace the first full paragraph on page 12 with the following:

With the present invention, a delay time in relay from a point of time when a header of specific information arrives at a slave-side port in the multiplexer under a point of time when the [deader] header of the specific information is outputted from the master-side port is always equal to a sum of a specific constant time and other constant processing delay time (such as a time for passing through a transfer path terminating circuit or the like), so that fluctuation in a delay time in relay due to queuing does not occur. With this feature, fluctuation of a delay time in transferring specific information from the slave device to the master device due to queuing can be eliminated.

Please replace the second paragraph on page 32 with the following

Namely, the polled slave device 7 transmits a specific information for starting the sampling time matching to the master device 6 according to the local sampling time, and the master device 6 having [receiving] received the specific packet returns a specific packet to the slave device 7 according to the local sampling time. Further, the slave device 7 having received the specific

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packet returned from the master device computes ΔT, and adjusts the sampling time and the sampling number (Refer to description of the communication network based on the conventional network).

Please replace the first paragraph on page 34 with the following:

When the identification bit indicates a general packet, then the general packet is once stored in the master-destined general packet buffer 21 provided to the slave-side port 12, and when the identification bit indicates a specific packet, then the specific packet is once stored in the master-destined specific packet buffer 22. Each of these buffers transmit the packet received from the master-side port 11 via the packet multiplexing bus [24after] 24 after getting a permissions from the master-destined buffer selection circuit 25.

Please replace the first full paragraph on page 79 with the following:

Accordingly, in this embodiment, like in Embodiment 8, even when each second master device 44 collects sampling information from the slave devices 7 outside the local small-scale network as well as from the slave devices 7 outside the local small-scale network, precision of sampling time in the third master device 54 and that in each slave device 7 can be improved. Further, in the communication network according to this embodiment, a number of

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devices and a number of transfer paths can be reduced as compared to those in the communication network according to Embodiment 8.

Please replace the second paragraph on page 81 with the following:

With the present invention, a delay time in relay from a point of time when a header of specific information arrives at a slave-side port in the multiplexer under a point of time when the [deader] header of the specific information is outputted from the master-side port is always equal to a sum of a specific constant time and other constant processing delay time (such as a time for passing through a transfer path terminating circuit or the like), and there occurs no fluctuation in a delay time in relay due to queuing. with this feature, there is provided the advantage that fluctuation of a delay time in transferring specific information from the slave device to the master device due to queuing can be eliminated.

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1. (Amended)

A communication network comprising:

a master device and a plurality of slave devices connected to each other through at least one [unit of] multiplexer in a tree [form] <u>configuration</u> with the master device at the vertex for transmitting and receiving various types of specific information having a fixed length to and from <u>each ones of</u> the <u>plurality of slave</u> devices [each other]; wherein

said master device specifies any of the slave devices via the multiplexer according to a round-robin <u>polling order</u>, and then

the specified slave device transmits the specific information for starting <u>communications with the master device, the specific information being</u> used for matching the sampling time in said master device and executes specific <u>calculations</u> [computing] according to the specified information for returning <u>said specific information</u> [returned] from said master device according to the specific information for starting.

Claim 2. (Amended)

The communication network according to claim 1; wherein each of said slave devices and said master device transmits [a] general information sampled at each of the matched sampling [timing] <u>times</u> and having a fixed length in addition to the specific information for starting <u>at a predetermined cycle</u> and specific information for returning at a predetermined cycle.

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Claim 3. (Amended)

The communication network according to claim 2; wherein said multiplexer comprises:

a master-side port for connecting said master device thereto and slave-side ports for connecting the plurality of slave devices thereto for mutual communication;

a plurality of master-destined general information receiving [unit] units for receiving the general information from said slave-side ports;

a master-destined specific information receiving unit for receiving the specific information for starting from each of said slave-side ports and managing the specific information in batch;

a slave-destined broadcasting bus for broadcasting information obtained from said master-side port to all of said slave-side ports;

a master-destined information selecting unit for selecting any one of said [mater-destined] master-destined general information receiving units or said master-destined specific information receiving unit and allowing output to said master device according to a prespecified method; and

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a master-destined information multiplexing bus for outputting the information allowed by said master-destined information selecting unit to said master-side port.

Claim 4. (Amended)

The communication network according to claim 3 wherein said master-destined information selecting unit

allows output from said <u>plurality of</u> master-destined general information receiving <u>units</u> [unit] according to a round-robin when the specific information is not received from said slave-side port;

inhibits outputs of the specific information for a specified period of time decided by a time required for transmitting the information with a fixed length after start of input into said master-destined specific information receiving unit when the specific information is received from any of said slave-side ports; and further

inhibits new output from said <u>plurality of</u> master-destined general information receiving <u>units</u> [unit] for the specified period of time and allows output from said master-destined specific information receiving unit after passage of the specified period of time.

Claim 9. (Amended)

The communication network according to claim 8; wherein said master device and each of said slave [devises] devices transmits management information with a fixed length to a target device at a predetermined cycle; and

said multiplexer further comprises:

a management information transreceiving unit for transmitting or receiving the management information; and

said plurality of master-destined information selecting [unit inhibits] units inhibit new output from said management information transreceiving unit for the specified period of time when the specified information has been received from any of said slave-side ports, and allows output from said master-destined specific information receiving unit after passage of the specified period of time, and further

said slave-destined information selecting unit inhibits new output from the management information transreceiving unit for the specified period of time when the specific information has been received from said master-side port, and allows output from said slave-destined specific information receiving unit after passage of the specified period of time.

Claim 10. (Amended)

The communication network according to claim 8; wherein, [out of all of said packet multiplexers] at least one [packet] multiplexer is replaced with a second multiplexer constituting a small-scale communication network;

said at least one second multiplexer is connected via said multiplexer with said master device at the vertex, and one or more multiplexers are connected to each of said second multiplexer according to necessity with a plurality of said slave devices connected thereto in a tree configuration [form]; and

each of said second multiplexers does not relay the specific information, and behaves as a slave device with respect to a master device at an upper level, and also behaves as a master device with respect to each of the slave devices at a lower level;

said master device specifies said second multiplexer according to a round-robin polling order, and each of said second multiplexer transmits the specific information for starting communications with the master device, the specific information being used for matching the sampling time to said master device according to a specified order and executes a prespecified operation according to the specific information for returning said specific information

[returned] from said second multiplexer in response to the specific information for starting **and** to match the sampling time; and further

each of said second multiplexer specifies each of said slave devices via said multiplexer according to a round-robin <u>polling order</u>, and each of said slave devices transmits information for starting **and** used for matching the sampling time to said second multiplexer via said multiplexer according to the specified order and also executes a specified operation according to the specific information for returning <u>said specific information</u> [returned] from said second multiplexer in response to the specific information for starting **and** to match the sampling time.

Claim 13. (Amended)

The communication network according to claim 8; wherein, [out of all of said packet multiplexers] at least one packet multiplexer is replaced with a third multiplexer constituting a small-scale communication network;

at least one of said third multiplexers is connected thereto via said multiplexer with said master device at the vertex, and further a plurality of said slave devices are connected via said third multiplexer and one or more multiplexers according to necessity in a tree <u>configuration</u> [form] with a second

master device functioning as a master device in the small-scale communication

network provided at the vertex;

said master device specifies each of said slave devices via said

multiplexer and said third multiplexer according to a round-robin polling order,

and each of said slave devices transmits the specific information for starting

and used for matching the sampling time to said master device according to the

specified order, and executes a specified operation according to the specified

information for returning said specified information [returned] from said master

device in response to the specific information for starting and to match the

sampling time.

Claim 15. (Amended)

The communication network according to claim 14; wherein said master-

destined information selecting unit

inhibits outputs of the specified information for the specified period of

time when the specific information has been received from any of said slave-

side ports;

inhibits new output from a plurality of said master-destined general

information receiving [unit] units as well as from said second master-side

master-destined general information receiving unit for the specified period of

time and allows <u>output</u> [outp] from said master-destined specific information

receiving unit for passage of the specified period of <u>time</u> [tim]; and

said slave-destined information selecting unit

inhibits output of the specific information for the specified period of time

when the specific information has been received from said master-side port;

inhibits new output from said slave-destined general information

receiving unit as well as from said second master-side slave-destined general

information receiving unit for the specified period of time and allows output

from the slave-destined specific information receiving unit after passage of the

specified period of time; and

said second master-destined information selecting unit allows output

from said master-side second master-destined general information receiving

unit as well as from said slave-side second master-destined general information

receiving unit according to a round-robin.

Claim 16. (Amended)

The communication network according to claim 13; wherein,

in place of said master device, there are provided:

a switch for switching the general information;

a third master device for transmitting or receiving the specified information; and

at least one fourth multiplexer connected to said switch; and

said third master device specifies each of said slave devices via said multiplexer, said fourth multiplexer, and said third multiplexer according to a round-robin polling order, and then each of said slave devices transmits the specific information for starting used for matching the sampling time to said master device according to a specified order and executes a specified operation according to the specific information for returning returned from said master device in response to the specific information for starting to match the sampling time.

Claim 17. (Amended)

The communication network according to claim 16; wherein said fourth multiplexer has [an] a switch-side port for connecting the switch thereto to relay mutual communications, and comprises:

a switch-destined general information receiving unit in place of said plurality of master-destined general information receiving units [unit] for discretely receiving the general information from each of said slave-side ports;

a switch-side slave-destined general information receiving unit in place of said slave-destined general information receiving unit for receiving the general information from said switch-side port; and

a third master-destined information control unit for controlling said master-destined specific information receiving unit and allowing output to said third master device according to a specified method in place of said master-destined information selecting unit; and further comprises, in addition to components of the multiplexer,

a switch-destined information selecting unit for selecting one of said switch-destined information receiving units and allowing output therefrom.

Claim 18. (Amended)

The communication network according to claim 17; wherein said master-destined information control unit

accumulates the specified information in said master-destined specific information receiving unit for the specified period of time when the specified information has been received from said slave-side port, and

outputs the specified information from said master-destined information receiving unit after passage of the specified period of time; and

said switch-destined information selecting unit allows output from said

switch-destined general receiving unit according to a round-robin <u>polling order</u>;

and

said slave-destined information selecting unit

inhibits output from said slave-destined specific information receiving

unit for the specified period of time when the specific information has been

received from said master-side port,

inhibits new output from said slave-destined general information

receiving unit for the specified period of time, and

allows output from said slave-destined specific information receiving unit

after passage of the specified period of time.

Claim 19. (Amended)

The communication network according to claim 13; wherein,

in place of said master device, there are provided:

a switch for switching the general information and the specific

information; and

a third master device for transmitting or receiving the specific

information; and

said third master device specifies each of said slave devices via said switch, said multiplexer, and said third multiplexer according to a round-robin polling order, and then each of said slave devices transmits specific information for starting used for matching the sampling time to said master device and executes a specified operation according to the specific information for returning returned from said master device according to the specific information for starting to match the sampling time.

Claim 22. (Amended)

The communication network according to claim 4 [1]; wherein information transmitted from or received by each device is variable in the length, and

[in this case,] the specified period of time during which output of the specific information from each device is inhibited is restricted within a time frame decided by a time prespecified for transmitting information with the maximum length.